9 Truck Costs

- Truck rate of $1.41 per mile for 48,000 pounds
- Road user fees 40% under road costs
- 4.8% of roadway damage is recovered by weight-mile fees
- Truck road damage 36 times barge
- $50 billion road bill for California

There are literally thousands of truck rates, which can fluctuate by season, by traffic lanes, by defining the head-haul and the back-haul, by marginal rates for offsetting deadhead miles, by volume contracts and a number of other considerations.

However, to provide a base line for comparison of truck and barge costs over a distance of 1000 miles, this study will use USDOT-BTS expenses per mile for the Motor Carrier Industry: 1990 through 2000 and forecasts through 2005.

Average expenses per mile for all types of for-hire truck transportation were $1.78 per mile in 2000. By 2005 actual motor carrier expenses per mile should average 5 to 6 cents a mile higher than 2000. All carriers are expected to incur $1.84 per mile in 2005.

Costs per mile in 2000 were based on $1.50 per gallon diesel prices. The USDA Fruit and Vegetable Truck Rate Report for June 23, 2004 reported retail on-highway diesel prices for the West Coast at $1.959 per gallon, with California at $2.029 per gallon.

Using a value of 6.5 miles per gallon for line-haul trucks of 80,000 GVW the increase from $1.50 per gallon in 2000 to $1.96 per gallon in 2004 would equate to 7 cents per mile additional cost.

For a fair comparison, the expenses for all types of for-hire truck transportation needs to be decomposed into the equipment type that would compete for freight that would move via barge.

In 2000 general freight carriers – truckload cost per mile was $1.45; adding the expected 8 cents per mile and the 7 cents for increased price of diesel the forecast 2005 cost per mile would be $1.60 per mile. The average length of haul for GF-TL was 698 miles in 2000. The average GF-TL load was 15.1 tons or 30,200 pounds.

Reefer carriers in 2000 had an expense of $1.26 per mile, which would be increased to $1.41 per mile in 2005. Their average length of haul in 2000 was 871 miles and their average load was 19 tons or 38,000 pounds. How does this compare to the USDA Fruit and Vegetable Truck Rate Report for June 23, 2004? Truck rates are often in relationship to the value of the product to account for claims and also fragile condition of the product. Three rates were published: potatoes from Yakima Valley, WA to Los Angeles at $1,463 per truckload; apples and pears at $1,700; and cherries at $1,938. Using Toppenish as the origin, the distance using MapQuest is 1133 miles with a driving time of 17 hours and 21 minutes (65 MPH average) for a range of rates of $1.29 to $1.50 to $1.71 per mile.

Another spot check on rates as of the writing of this report is a rate of $700 for drayage of a container from Portland, Oregon to Charleston (Coos Bay), Oregon and return. The distance is 452 miles for a truck rate of $1.55 per mile. Another comparison of container drayage rates on the same date as shown in another section of this report is $504 for 340 miles with a load of 43,000 pounds or $1.40 per mile. For a heavy chassis to carry 55,000 pounds the rate is $588 to $700 or $1.63 per mile to $1.94 per mile.

To be conservative, it would be reasonable to use $1.41 per mile; but a load factor of 24 pallets, each approximately one ton or 48,000 pounds would be more realistic than the 38,000 pounds cited above.

<u>Considerations Regarding the Full Cost of Trucking</u>

From Transportation Cost and Benefit Analysis – Roadway Costs, Victoria Transport Policy Institute, external costs have been identified as: "Roadway costs not borne by user charges (special fuel taxes, vehicle

registration fees and road tolls) are considered external costs." U.S. roadway user fees in 2000 funded only about 63% of total roadway costs. Vehicle user fees needed to increase by 59% to fully fund roadway costs. Results of the most recent federal highway cost allocation study, showing cost responsibility, roadway user payments and external costs (roadway costs not paid by vehicle user payments) averaged over total travel for combination trucks were external costs of 4.4 cents per mile. Within this publication is cited "Morris and DeCicco conclude that road user fees totaled $76 billion, while roadway expenses totaled $97 billion or more, indicating that road user fees only cover 78% of public road expenses." Further cited within: "Puentes and Prince find that fuel taxes fund only about 35% of total roadway expenditures and total vehicle user fees (fuel taxes, vehicle taxes and fees and road tolls) fund about 59% of roadway expenses." The conclusion regarding road costs not funded by user fees for trucks is 7.5 cents per vehicle mile.

It is interesting to note from Kenneth Casavant and Jerry Lenzi, Fee and Fine Structure for Overloaded Trucks in Washington, Transportation Quarterly, Vol. 47, NO. 2, April 1993, pp. 281-294 that "Lenzi and Casavant estimate the roadway damage costs of trucks to range from 1 cents to 6 cents per ton-mile on state highways, with an average of 5 cents and 2 - 9 cents per ton-mile on county roads, with an average of 7.5 cents. They also estimate the roadway damage cost of overloaded trucks to range from 8 cents to $2.50 per ton-mile, depending on weight." If we calculate a truck move of 21.5 tons for 1000 miles (or 21,500 ton-miles) the impact of 7.5 cents per ton-mile would be $1,612.50. Even the minimal impact of 1 cent per ton-mile would be $215. Overloading is a concern when states allow up to 105,000 pounds Gross Vehicle Weight. The Casavant and Lenzi estimate of a minimum of 8 cents per ton-mile for our example would damage roadways by $1,720.

Oregon's new weight-mile tax effective January 1, 2004 for a five-axle truck (18 wheeler) for 80,001 pounds is 13.59 cents per mile. The tax for a five axle truck of 96,001 pounds is 18.51 cents per mile for a difference of 4.92 cents per mile which is cost recovery by the state of only 4.8% of the minimum roadway damage identified by Casavant and Lenzi because Casavant and Lenzi's values are per ton-mile and our example now is calculated on 48,000 ton-miles, i.e. 8 cents per ton-mile at 48 tons for 1000 miles is $3,840 while the weight-mile tax for 96,001 pounds for 1000 miles is 18.51 cents per mile times 1000 or $185.01. The one

truckload move roadway cost to society would be $3,840 less $185.01 recovered in the weight mileage tax or $3,654.99.

What would be the equivalent for an ocean barge paying the highest State of Oregon weight mileage tax rate and road damage cost? Our implementation barge model is based on 600 FEU of 55,000 pounds per FEU for 1000 miles. This would be 16,500,000 ton-miles. We will select a 50-mile radius from the ports at 18.51 cents per mile times 600 FEU for a total of $5,553 or 0.03365 cents per ton-mile. To this we will add Casavant and Lenzi's damage rate of 8 cents per ton-mile, which is 50 miles x 600 FEU x 27.5 tons for a total of 8215,000 ton-miles at 8 cents per ton-mile or $66,000. The two-barge move cost to society would be $66,000 less $5,553 weight mileage tax recovery or $60,447.

Since one truckload cost is $3,654.99 as shown in the preceding paragraph, and there are 600 truckloads in the two-barge tow, the cost to society would be $2,192,994 or 36 times the barge impact.

So what does this mean for modal shift from highway to barge? What does it mean for general taxpayers? For diversion of funds from other needs of society?

From Victoria Transport Policy Institute cited above, "This indicates that urban highway capacity expansion typically costs $4 - $10 million per lane-mile for land acquisition, lane pavement and intersection reconstruction." Please note this is per lane-mile, therefore a two lane highway is $8 - $20 million per mile.

From Washington State Department of Transportation Highway Construction Cost Comparison Survey, April 2002: Construction Cost for Diamond Interchange nationally is $8,988,919 with Washington State at $6,137,104, Oregon at $8,613,464 and California at $10,096,696. The costs exclude right-of-way costs. Costs for the 1.2 mile include: clearing and grubbing, surfacing, constructing a pre-stressed concrete girder bridge, constructing retaining walls, paving with asphalt concrete pavement, constructing beam guardrail, placing concrete barrier and striping.

From The Register-Guard of Eugene, Oregon on July 21, 2004 the following comments are drawn from the article "West Coast's Lifeline, I-5, Shows Increasing Stress" by Dan Weikel, Los Angels Times.

- In March 2001, for three weeks, 2,000 big rigs were forced off I-5 while construction crews rebuilt Fords Bridge across the Umpqua River in Southern Oregon. Transportation costs increased by as much as $200 per shipment.

- Interstate 5 is outdated, worn out and over-whelmed with traffic along much of its 1,381 mile length. Transportation planners say congestion drives up shipping costs, consumer prices and discourages tourism, putting a drag on the economies of California, Oregon and Washington.

- I-5 is the primary north-south route for trucks ferrying goods to and from Mexico, Canada and the West Coast's six primary seaports: Seattle; Portland; San Francisco; Los Angeles; Long Beach and San Diego.

- I-5 is the backbone of the State of California and the backbone of the region.

- The West Coast Corridor Coalition plans to consider alternative highway, toll ways for trucks, improved rail service and better highway management including reversible lanes and staggered work hours for commuters. The improvements would cost an estimated $50 billion.

[Author's Note: The idea of a new vision for freight movement via water and relieving the I-5 corridor of future deterioration after reconstruction is not being considered. One aspect of this report is to make Coalitions aware they have a viable alternative that is being overlooked and a partial solution to congestion.]

- In the past 25 years, traffic on most sections of the highway in San Diego County has at least doubled and is expected to nearly double again by 2015, requiring 20 lanes to control congestion.

- The California Transportation Department plans to widen I-5 to at least five lanes in each direction for about 15 miles north from the Orange County line. The project will cost $800 million, but will do little to relieve the bottleneck to the north. Transportation officials say that that money might not be available until 2009 because of the state budget crisis.

- The most serious problem in Oregon is not congestion but more than 100 obsolete bridges between Klamath Falls and Portland.

- Oregon has proposed a $4 billion bond program to repair bridges across Oregon. About $830 million is needed to fix bridges on I-5 alone.

- Regarding the congestion aspect of crossing the Columbia River I-5 bridge in Portland, a daily commuter remarked: "Having driven in Los Angeles and having driven in Seattle, there is not a whole lot of difference . . . You can take an hour to go 10 miles on the I-5 and there is really no other way to go."

An example of social cost is a citation by the Mayor of Wilsonville, Oregon, a community that straddles Interstate 5 about 13 miles south of Portland, Oregon: "Our next order of business is to work with our neighboring cities, the legislature, and the citizens of Metro to ensure that we don't end up as another Seattle or Los Angeles with concrete canyons lining both sides of I-5 clear down the valley. It isn't Oregon, at least not the one we know and love. It would ruin prime farmland, sap investment and energy from our city centers, lead to heavy congestion and create an ugly, unappealing landscape forever."

The answers to the societal questions are that without a new vision for transporting freight, society will continue to pay for an imbalanced cost recovery from the modes of transportation, modal decision makers will continue to select a mode of transport that does not provide fully allocated costs comparisons (i.e. include external costs), resources will continue to be redirected from general funds not to the society's highest and best use but to a select subsidized segment of society and roadway resources will continue to deteriorate as well as continued costs of congestion.